



Queensland University of Technology
Brisbane Australia

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Why do Impulsive people gamble? Using the TCI to model the relationship between Impulsivity and gambling behaviour

Peter J O'Connor
Chris J Jackson

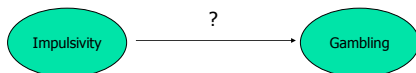
Personality and Gambling

- Gamblers tend to be high in 'Impulsivity'
 - Impulsive Problem Gamblers represent a large subgroup of all Problem Gamblers (between 30% and 60%¹)
 - Individuals with Problem Gambling tend to be higher in trait Impulsivity than both non-gamblers and non-Problem Gamblers (Steel & Blaszczynski, 1998; Zuckerman & Kuhlman, 2000).
 - Problem Gambling is officially recognised by the DSM IV-TR (APA, 2000) as being a disorder of impulse control.

1. This is an estimate based on an Australian sample of gamblers analysed by Blaszczynski, Steel & McConaghy, 1997

Impulsivity and Gambling

- Impulsivity can predict gambling



- There has been little investigation into the mechanisms underlying this relationship

Purpose

- To test a model of the relationship between Impulsivity and Gambling
 - Identify *distal* predictors
 - Identify potential *mediators*
 - Identify potential *moderators*
 - Simultaneously test these pathways through path analysis

Choice of personality model

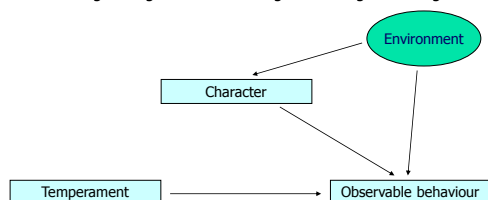
- Criteria
 - Model of personality should include Impulsivity
 - The model of personality should be *complete* (i.e. measure both the physiological *and* cognitive basis of personality)
 - The model of personality should be a well validated, reliable model of personality

Cloninger's Temperament and Character Inventory (TCI)

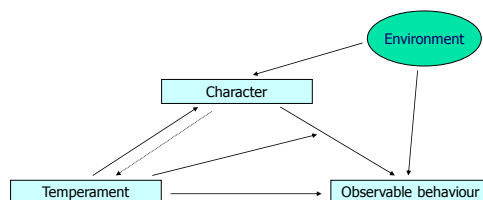
- TCI measures 'Novelty Seeking' a subscale of which is Impulsivity
- The TCI measures both Temperament (Harm Avoidance, Novelty Seeking, Persistence and Reward Dependence) as well as Character (Self Directedness, Cooperation and Self Transcendence)
- TCI is well validated and reliable (Cloninger, et. al., 1994; Griego, et al., 1999; Whiteside & Lynam, 2001).

Cloninger's original Psychobiological Model

- To summarize Cloninger's framework, observable behaviour is partly the direct result of individual differences in temperament, and partly the indirect result of such instinctive impulses working through conscious thought and insight learning

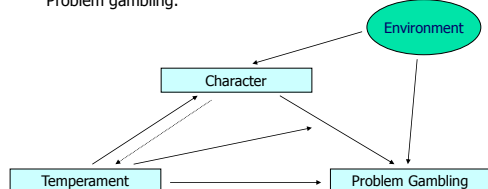


O'Connor & Jackson's updated model of Cloninger's dimensions



Cloninger's Model and Gambling

- Temperament dimensions, particularly Impulsivity, are partially directly related to gambling, and partially indirectly related to gambling through Character dimensions (Cooperation and Self Directedness). Dimensions might also interact to predict Problem gambling.



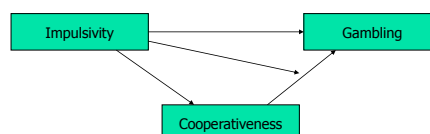
Gambling Model

- Three assumptions:
 - Impulsivity as a distal predictor of Gambling
 - Cooperativeness as a partial mediator of the relationship between Impulsivity and Gambling
 - Impulsivity is related to cooperativeness
 - Uncooperative individuals are likely to express their impulsivity in socially undesirable ways, based on their social isolation and lack of empathy
 - Impulsivity moderates the relationship between Cooperativeness and Gambling
 - Uncooperative individuals who *are not* impulsive, will not have a need to engage in gambling behaviour.

Hypothesis

- Cooperativeness will mediate the relationship between Impulsivity and Gambling, and this mediated effect will be particularly strong at high levels of Impulsivity.
- This type of effect is referred to as 'Moderated Mediated Regression' (Muller, Judd & Yzerbyt, 2005) or a 'Conditional Indirect Effect' (Preacher, Rucker & Hayes, in press).

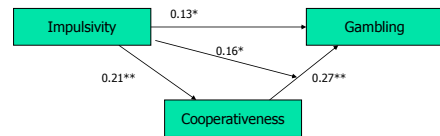
A moderated mediated gambling model



Methods

- Sample
 - 260 working university students who gamble *at least* occasionally
- Procedure
 - Participants completed a number of questionnaires online, including the TCI (Temperament and Character Inventory) and the SOGS (South Oaks Gambling Screen).

Results

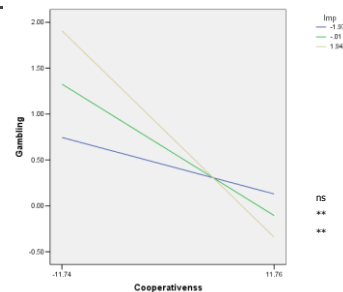


GFI = 0.99, CFI = 0.99, NFI = 0.98, RMSEA = 0.001

Results

- Mediation was tested using the Monte Carlo (parametric) bootstrap. The mediated effect was found to be significant at $p > 0.005$.
- A Simple Slopes analysis was conducted to look at the relationship between Cooperativeness and Gambling at the mean level of Impulsivity and at ± 1 SD of Impulsivity.

Simple Slopes Analysis



Results Summarised

- Cooperativeness mediates the relationship between Impulsivity and Gambling, however this mediated effect is particularly strong at high levels of Impulsivity. At low levels of Impulsivity there is no significant relationship between Cooperativeness and Gambling.

Implications

- Results highlight the importance of cooperativeness in the relationship between Impulsivity and gambling.
- We argue that gambling serves as a dysfunctional outlet for impulsivity in those with poor social relationships (ie those low in cooperativeness). When impulsive individuals are high in cooperativeness, they are likely to express their impulsivity in more functional ways (based on Jackson, 2005).